

Attachment C6

Cost Estimate Worksheets

Fine Gold Reservoir (Chapter 6)

CODE:D-8170

ESTIMATE WORKSHEET

SHEET 1 OF 2

FEATURE: Fine Gold Dam Site Elev.900 Concrete Gravity Dam (RCC)	11-Jan-04	PROJECT: CALFED
		DIVISION:
		FILE: Briefcase\USBR Cost Sheets- Updated Sept 2003\FGC_900 FY03.xls\FGC_900 FY03

PLANT ACCT.	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Diversion and care of river					
		Upstream Cofferdam (Crest @ El. 590)		14,540	CY	\$25.00	\$363,500
		Steel Pipe		1,682,400	LBS	\$2.00	\$3,364,800
		Concrete Encasement		2,950	CY	\$150.00	\$442,500
		Downstream Cofferdam (Crest @ El. 578)		52,070	CY	\$25.00	\$1,301,750
	2	Excavation, all classes, for dam foundation		30,150	CY	\$16.00	\$482,400
	3	RCC in dam		911,280	CY	\$40.00	\$36,451,200
	4	Concrete facing elements		31,320	CY	\$120.00	\$3,758,400
	5	Concrete cap on top of dam		1,720	CY	\$250.00	\$430,000
	6	Leveling concrete in dam foundation		7,540	CY	\$200.00	\$1,508,000
	7	Concrete in spillway crest		770	CY	\$250.00	\$192,500
	8	Concrete in spillway training walls		335	CY	\$350.00	\$117,250
	9	Concrete in Outlet Works Intake Structure		N/A	CY		
	10	Concrete in Outlet Works Pipe Encasement		1,100	CY	\$150.00	\$165,000
	11	Excavation for Pump/Generator Structure		135,000	CY	\$15.00	\$2,025,000
	12	Concrete in Pump/Generator Structure		35,800	CY	\$350.00	\$12,530,000
	13	Furnishing and Handling Cement		194,314	TONS	\$90.00	\$17,488,260
	14	Furnishing and Handling Reinforcement		5,960,000	LBS	\$0.60	\$3,576,000
	15	Grout Hole Drilling		19,650	LF	\$35.00	\$687,750
	16	Foundation Grouting		62,000	Sacks	\$23.00	\$1,426,000
		Subtotal					\$86,310,310

QUANTITIES		PRICES	
BY S. Higinbotham	CHECKED	BY R. Baumgarten	CHECKED
DATE PREPARED	APPROVED	DATE 01/11/04	PRICE LEVEL Appraisal 03

CODE:D-8170

ESTIMATE WORKSHEET

SHEET 2 OF 2

PLANT ACCT.		PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
FEATURE: Fine Gold Dam Site Elev.900 Concrete Gravity Dam (RCC)			11-Jan-04	PROJECT: DIVISION: C:\Documents and Settings\emogood\Desktop\W Briefcase\USBR Cost Sheets - Updated Sept 2003\FGC_900 FY03.xls\FGC_900 FY03				
		17	Set up for Drain Holes in Gallery		131	Holes	\$200.00	\$26,200
		18	Drilling Drain Holes		15,610	LF	\$58.00	\$905,380
		19	Outlet Works Trashracks		72,000	LBS	\$3.50	\$252,000
		20	Outlet Works Bulkhead for Intake Structure		45,500	LBS	\$4.00	\$182,000
			Seats and Guides for Bulkhead		36,000	LBS	\$5.00	\$180,000
		21	Steel Pipe		2,177,040	LBS	\$2.00	\$4,354,080
		22	Valves, all Sizes and Types		523,200	LBS	\$6.00	\$3,139,200
		23	Hydraulic Control System		20,000	LBS	\$10.00	\$200,000
		24	Pump Units		372,100	LBS	\$7.00	\$2,604,700
		25	Turbines		651,900	LBS	\$6.50	\$4,237,350
		26	Generator		500,000	LBS	\$8.00	\$4,000,000
		27	Governors, Motors, etc.		1-Unit	LS		\$1,200,000
			Mobilization					\$5,400,000
			Subtotal					\$112,991,220
			Unlisted Items (15%)					\$17,008,780
			Contract Cost					\$130,000,000
			Contingencies (30%)					\$40,000,000
			Field Cost					\$170,000,000
QUANTITIES				PRICES				
BY		CHECKED		BY		CHECKED		
S. Higinbotham				R. Baumgarten				
DATE PREPARED		APPROVED		DATE		PRICE LEVEL		
				01/11/04		Appraisal 03		

ESTIMATE WORKSHEET

FEATURE Fine Gold Dam - 380' Elevation = Appraisal Design Tab = fg900		PROJECT Upper San Joaquin 11-Jan-04 05:02 PM DIVISION C:\Documents and Settings\smosgood\Desktop\M Briefcase\USBR Cost Sheets -					
	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
GEOTECH							
	10	Mobilization - 5%	8313	1	LS		\$5,300,000
	20	Excavation - common (removal of alluvium, rock slope cleaning by dozer to sound rock, minimal ripping.	8313	98,500	CY	\$7.00	\$689,500
	30	Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98% Proctor, 2 mile haul). Toe slab imperv. cap	8313	21,000	CY	\$10.00	\$210,000
	40	Zone 1B - Exc, haul, & place (random in 18" lifts to 95% Proctor, 0.5 mi. haul). Shell for Zone 1A	8313	35,000	CY	\$7.50	\$262,500
	50	Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to 98% Proctor, 0.5 mile haul.) Deck foundation.	8313	60,000	CY	\$22.00	\$1,320,000
	60	Zone 3A - Exc, haul, & place (processed GP in 18" lifts to 95% Proctor, 0.5 mile haul.) Transition to shell.	8313	60,000	CY	\$21.50	\$1,290,000
	70	Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts, blasting operation 0.5 mile away.) Upstream shell.	8313	1,600,000	CY	\$9.50	\$15,200,000
	80	Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts, blasting operation 0.5 mile away.) Downstream shell.	8313	1,690,000	CY	\$9.25	\$15,632,500
	90	Concrete deck (3,000 psi strength, 0.4% reinforcing)	8313	21,900	CY	\$260.00	\$5,694,000
	100	Concrete toe slab (3,000 psi strength, 0.3% reinforcing)	8313	2,750	CY	\$260.00	\$715,000
	110	Anchor bars for toe slab (4' deep grouted into granite)	8313	12,350	anchors	\$40.00	\$494,000
	120	Parapet Wall (3,000 psi, 0.4% reinforcing)	8313	1,960	CY	\$460.00	\$901,600
	130	Drilling for grout program (setup, drill, test) setups=576	8313	28,000	LF	\$33.00	\$924,000
	140	Grouting (grout injection into competent granite.)	8313	21,000	bags	\$27.00	\$567,000
	150	Unwatering (assumes 30 month construction)	8313	1	LS		\$1,500,000
	160	Spillway (left abut, in rock)	8130	1	LS		\$4,950,000
	170	Outlet Works (tunnel or cut and cover?)	8130	1	LS		\$7,580,000
	180	Pumping/Powerplant	8130	1	LS		\$38,100,000
	190	Diversion and care of river	8130	1	LS		\$10,780,000
		Subtotal					\$112,110,100
		Unlisted Items -					\$17,889,900
		Contract Cost					\$130,000,000
		Contingencies -					\$40,000,000
		Field Cost					\$170,000,000
QUANTITIES				PRICES			
BY	Mark	CHECKED	BY	R.	CHECKED		
DATE	8/11/2002	APPROVED	DATE	1/11/2004	PRICE LEVEL	Appraisal	

CODE:D-8170

ESTIMATE WORKSHEET

SHEET_1_ OF _2_

PLANT ACCT.		PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
FEATURE: Fine Gold Dam Site Elev.1100 Concrete Gravity Dam (RCC)			11-Jan-04	PROJECT: CALFED DIVISION: FILE: <small>C:\Documents and Settings\mjs\work\est\proj\w\</small> Briefcase\USBR Cost Sheets - Updated Sept 2003\FGC_1100 FY03.xls\B				
		1	Diversion and care of river					
			Upstream Cofferdam (Crest @ El. 590)		14,540	CY	\$25.00	\$363,500
			Steel Pipe		3,557,000	LBS	\$1.75	\$6,224,750
			Concrete Encasement		4,500	CY	\$150.00	\$675,000
			Downstream Cofferdam (Crest @ El. 578)		64,240	CY	\$25.00	\$1,606,000
		2	Excavation, all classes, for dam foundation		102,420	CY	\$14.00	\$1,433,880
		3	RCC in dam		3,604,420	CY	\$33.00	\$118,945,860
		4	Concrete facing elements		92,850	CY	\$80.00	\$7,428,000
		5	Concrete cap on top of dam		5,010	CY	\$250.00	\$1,252,500
		6	Leveling concrete in dam foundation		25,610	CY	\$180.00	\$4,609,800
		7	Concrete in spillway crest		770	CY	\$250.00	\$192,500
		8	Concrete in spillway training walls		1,040	CY	\$350.00	\$364,000
		9	Concrete in Outlet Works Intake Structure		N/A	CY		
		10	Concrete in Outlet Works Pipe Encasement		2,120	CY	\$150.00	\$318,000
		11	Excavation for Pump/Generator Structure		180,000	CY	\$15.00	\$2,700,000
		12	Concrete in Pump/Generator Structure		35,800	CY	\$350.00	\$12,530,000
		13	Furnishing and Handling Cement		724,922	TONS	\$90.00	\$65,242,980
		14	Furnishing and Handling Reinforcement		6,712,000	LBS	\$0.60	\$4,027,200
		15	Grout Hole Drilling		88,250	LF	\$30.00	\$2,647,500
		16	Foundation Grouting		88,250	Sacks	\$22.00	\$1,941,500
			Subtotal					\$232,502,970
QUANTITIES				PRICES				
BY		CHECKED		BY		CHECKED		
S. Higinbotham				R. Baumgarten				
DATE PREPARED		APPROVED		DATE		PRICE LEVEL		
				01/11/04		Appraisal 03		

CODE:D-8170

ESTIMATE WORKSHEET

SHEET 2 OF 2

FEATURE:		11-Jan-04	PROJECT:				
Fine Gold Dam Site Elev.1100 Concrete Gravity Dam (RCC)			DIVISION:				
			FILE: C:\Documents and Settings\smosgood\Desktop\Briefcase\USBR Cost Sheets - Updated Sept 2003\FGC 1100 FY03.xls\B				

PLANT ACCT.	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	17	Set up for Drain Holes in Gallery		353	Holes	\$200.00	\$70,600
	18	Drilling Drain Holes		75,330	LF	\$52.00	\$3,917,160
	19	Outlet Works Trashracks		81,000	LBS	\$3.50	\$283,500
	20	Outlet Works Bulkhead for Intake Structure		82,500	LBS	\$4.00	\$330,000
		Seats and Guides for Bulkhead		61,700	LBS	\$5.00	\$308,500
	21	Steel Pipe		4,448,300	LBS	\$1.75	\$7,784,525
	22	Valves, all Sizes and Types		831,940	LBS	\$6.00	\$4,991,640
	23	Hydraulic Control System		25,000	LBS	\$10.00	\$250,000
	24	Pump Units		359,400	LBS	\$7.00	\$2,515,800
	25	Turbines		629,700	LBS	\$6.50	\$4,093,050
	26	Generator		780,000	LBS	\$8.00	\$6,240,000
	27	Governors, Motors, etc.		1-Unit	LS		\$1,200,000
	28	Saddle Dam		1	LS		\$23,338,700
		Mobilization					\$14,500,000
		Subtotal					\$302,326,440
		Unlisted Items (15%)					\$47,673,555
		Contract Cost					\$350,000,000
		Contingencies (30%)					\$105,000,000
		Field Cost					\$455,000,000

QUANTITIES		PRICES	
BY S. Higinbotham	CHECKED	BY R. Baumgarten	CHECKED
DATE PREPARED	APPROVED	DATE 01/11/04	PRICE LEVEL Appraisal 03

CODE:D-8170

ESTIMATE WORKSHEET

SHEET 1 OF 2

FEATURE: Fine Gold Dam Site Elev. 1100 Concrete Faced Rockfill Dam (CFR)	11-Jan-04	PROJECT: CALFED
		DIVISION: C:\Documents and Settings\smosgood\Desktop\W
		FILE: Briefcase\USBR Cost Sheets - Updated Sept 2003\FG_1100 FY03.xls\B

PLANT ACCT.	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Diversion and care of river					
		Upstream Cofferdam (Crest @ El. 655)		112,060	CY	\$22.00	\$2,465,320
		Excavation for Diversion Tunnel		22,600	CY	\$180.00	\$4,068,000
		Concrete Liner for Tunnel		8,900	CY	\$285.00	\$2,536,500
		Furnishing and Handling Cement		2,510	TONS	\$120.00	\$301,200
		Furnishing and Handling Reinforcement		1,335,000	LBS	\$0.65	\$867,750
		Temp Tunnel Supports (Rock Bolts)		2,000	BOLTS	\$300.00	\$600,000
		Drilling for Rock Bolts		24,000	LF	\$20.00	\$480,000
		Diversion and care subtotal					\$11,318,770
						Say	\$11,300,000
		Spillwasy					
		Excavation for Spillway		576,754	CY	\$11.00	\$6,344,294
		Concrete in spillway crest		2,090	CY	\$200.00	\$418,000
		Concrete in spillway training walls and Apron		1,090	CY	\$230.00	\$250,700
		Furnishing and Handling Cement		900	TONS	\$120.00	\$108,000
		Furnishing and Handling Reinforcement		477,000	LBS	\$0.65	\$310,050
		Spillway subtotal					\$7,431,044
						Say	\$7,400,000
		Outlet Works					
		Concrete in Outlet Works Intake Structure		745	CY	\$420.00	\$312,900
		Excavation of Outlet Shaft and Gate Structure		3,270	CY	\$345.00	\$1,128,150
		Concrete in Outlet Works Shaft and Gate Structure		2,010	CY	\$485.00	\$974,850
		Furnishing and Handling Cement		570	TONS	\$120.00	\$68,400
		Furnishing and Handling Reinforcement		301,500	LBS	\$0.70	\$211,050
		Temporary Supports for Shaft					
		No. of Rock Bolts		150	Bolts	\$350.00	\$52,500
		Depth of Drilling		1,500	LF	\$20.00	\$30,000
		Outlet Works Trashracks		112,500	LBS	\$3.00	\$337,500
		Outlet Works Bulkhead & Seats for Intake Structure		115,600	LBS	\$5.00	\$578,000
		Outlet Gate for Gate Structure		544,600	LBS	\$7.50	\$4,084,500
		Outlet Works subtotal					\$7,777,850
						Say	\$7,800,000

QUANTITIES		PRICES	
BY	CHECKED	BY	CHECKED
S. Higinbotham		R. Baumgarten	
DATE PREPARED	APPROVED	DATE	PRICE LEVEL
		01/11/04	Appraisal 03

CODE:D-8170

ESTIMATE WORKSHEET

SHEET 2 OF 2

FEATURE: Fine Gold Dam Site Elev. 1100 Concrete Faced Rockfill Dam (CFR)	11-Jan-04	PROJECT: DIVISION: C:\Documents and Settings\smosgood\Desktop\W
		FILE: Briefcase\USBR Cost Sheets - Updated Sept 2003\FG_1100 FY03.xls\B

PLANT ACCT.	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Powerplant					
		Steel Pipe		2,717,000	LBS	\$2.00	\$5,434,000
		Valves, all Sizes and Types		4,448,300	LBS	\$5.00	\$22,241,500
		Hydraulic Control System		25,000	LBS	\$10.00	\$250,000
		Pump Units		359,400	LBS	\$7.00	\$2,515,800
		Turbines		629,670	LBS	\$6.50	\$4,092,855
		Generator		780,000	LBS	\$8.00	\$6,240,000
		Governors, Motors, etc.		1-Unit	LS		\$1,200,000
		Excavation for Pump/Generator Structure		145,840	CY	\$15.00	\$2,187,600
		Concrete in Pump/Generator Structure		35,800	CY	\$350.00	\$12,530,000
		Furnishing and Handling Cement		10,100	TONS	\$100.00	\$1,010,000
		Furnishing and Handling Reinforcement		5,370,000	LBS	\$0.60	\$3,222,000
		Powerplant subtotal					\$60,923,755
						Say	\$60,900,000

QUANTITIES		PRICES	
BY S. Higinbotham	CHECKED	BY R. Baumgarten	CHECKED
DATE PREPARED	APPROVED	DATE 01/11/04	PRICE LEVEL Appraisal 03

ESTIMATE WORKSHEET

FEATURE Fine Gold Saddle Dam Elev. 1100 Appraisal Design Tab =		PROJECT Upper San Joaquin 11-Jan-04 06:42 PM DIVISION File G:\Documents and Settings\smosgood\Desktop\M Briefcase\USBR Cost Sheets -				
PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	GEOTECH					
20	Excavation - common (removal of alluvium, rock slope cleaning by dozer to sound rock, minimal ripping.	8313	82,200	CY	\$7.00	\$575,400
30	Zone 1 -Core- Exc, haul, & place (CL, SM, GM in 6" lifts to 98% Proctor, 2 mile haul).	8313	380,000	CY	\$9.00	\$3,420,000
40	Zone 2 - Filter -Exc, haul, & place processed SM, GM in 18" lifts to 98% Proctor, 0.5 mile haul.)	8313	260,000	CY	\$20.00	\$5,200,000
50	Zone 3 -Shell- Exc, haul, & place (processed GP in 18" lifts to 95% Proctor, 0.5 mile haul.)	8313	1,500,000	CY	\$11.00	\$16,500,000
60	Riprap - Exc, haul, & place (processed GP in 18" lifts to 95% Proctor, 0.5 mile haul.)	8313	34,300	CY	\$16.00	\$548,800
70	Slope Protection - Exc, haul, & place (rockfill, 18" max lifts, blasting operation 0.5 mile away.)	8313	10,300	CY	\$15.00	\$154,500
	Subtotal					\$26,398,700
QUANTITIES		PRICES				
BY <u>Mark</u>	CHECKED	BY <u>R.</u>	CHECKED			
DATE <u>8/11/2002</u>	APPROVED	DATE <u>1/11/2004</u>	PRICE LEVEL <u>Appraisal</u>			

ESTIMATE WORKSHEET

FEATURE		PROJECT		11-Jan-04 06:42 PM		
Fine Gold Dam Elev. 1100 Appraisal Design		Upper San Joaquin River				
Tab = fg1100		DIVISION		C:\Documents and		
		File		Settings\smosgood\Desktop\My Briefcase\USBR Cost Sheets - Updated Sept 2003\{FG		
PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
GEOTECH						
10	Mobilization - 5%	8313	1	LS		\$13,000,000
20	Excavation - common (removal of alluvium, rock slope cleaning by dozer to sound rock, minimal ripping.	8313	175,000	CY	\$6.50	\$1,137,500
30	Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98% Proctor, 2 mile haul). Toe slab imperv. cap	8313	30,000	CY	\$9.00	\$270,000
40	Zone 1B - Exc, haul, & place (random in 18" lifts to 95% Proctor, 0.5 mi. haul). Shell for Zone 1A	8313	50,000	CY	\$7.00	\$350,000
50	Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to 98% Proctor, 0.5 mile haul.) Deck foundation.	8313	166,000	CY	\$19.00	\$3,154,000
60	Zone 3A - Exc, haul, & place (processed GP in 18" lifts to 95% Proctor, 0.5 mile haul.) Transition to shell.	8313	166,000	CY	\$18.50	\$3,071,000
70	Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts, blasting operation 0.5 mile away.) Upstream shell.	8313	7,550,000	CY	\$8.00	\$60,400,000
80	Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts, blasting operation 0.5 mile away.) Downstream shell.	8313	7,850,000	CY	\$7.75	\$60,837,500
90	Concrete deck (3,000 psi strength, 0.4% reinforcing)	8313	61,000	CY	\$220.00	\$13,420,000
100	Concrete toe slab (3,000 psi strength, 0.3% reinforcing)	8313	4,350	CY	\$220.00	\$957,000
110	Anchor bars for toe slab (4' deep grouted into granite)	8313	19,500	anchors	\$40.00	\$780,000
120	Parapet Wall (3,000 psi, 0.4% reinforcing)	8313	3,250	CY	\$425.00	\$1,381,250
130	Drilling for grout program (setup, drill, test) setups=910	8313	53,300	LF	\$32.00	\$1,705,600
140	Grouting (grout injection into competent granite.	8313	40,000	sacks	\$24.00	\$960,000
150	Unwatering	8313	1	LS		\$2,400,000
160	Spillway (left abut, in rock)	8130	1	LS		\$7,400,000
170	Outlet Works (tunnel or cut and cover?)	8130	1	LS		\$7,800,000
180	Pumping/Powerplant	8130	1	LS		\$60,900,000
190	Diversion and care of river	8130	1	LS		\$11,300,000
200	Saddle Dam	8313	1	LS		\$26,398,700
	Subtotal					\$277,622,550
	Unlisted Items - 15%					\$42,377,450
	Contract Cost					\$320,000,000
	Contingenices - 30%					\$96,000,000
	Field Cost					\$420,000,000
QUANTITIES			PRICES			
BY	Mark Pabst	CHECKED	BY	R.	CHECKED	
DATE	8/11/2002	APPROVED	DATE	1/11/2004	PRICE LEVEL	Appraisal 2003

INTERPOLATED AND PROJECTED CONTRACT COST FOR VARIOUS FINEGOLD STORAGE SIZES

900 Foot CFR Contract Cost (reference FG_900_CFR_3) \$130,000,000
 1100 Foot CFR Contract Cost (reference above) \$320,000,000

Description	Amount
Interpolated Contract Cost for Fine Gold 1020 Foot CFR Dam (Jul-2003 costs)	\$240,000,000
Projected Contract Cost for Fine Gold 1110 Foot CFR Dam (Jul-2003 costs)	\$330,000,000

